

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#14

In re Application of

Junji SHIRAI, et al.

Group Art Unit: 1714

Serial No.: 09/703,927

Examiner: T. Yoon

Filed: November 2, 2000

For: THIN INJECTION MOLDED ARTICLES

RECEIVED  
JAN - 2 2003  
TC 1700DECLARATION UNDER 37 C.F.R. 1.132

Assistant Commissioner of Patents and Trademarks,  
Washington, D.C. 20231

Sir:

I, Makoto KATO, c/o KABUSHIKI KAISHA TOYOTA CHUO  
KENKYUSHO, 41-1, Aza Yokomichi, Oaza Nagakute, Nagakute-cho,  
Aichi-gun, Aichi-ken, Japan do hereby declare:

That I am a co-inventor of the invention disclosed  
in the above-identified U.S. application (hereinafter  
referred to as "present invention" for brevity) and hence I  
am fully familiar therewith;

That I have read and am fully familiar with the art  
cited against the claims of the above-identified U.S.

application (hereinafter referred to as "present application" for brevity);

That I have personally conducted or supervised the conduct of all of the work reported in the examples including the comparative examples in the specification of the present application, and the results obtained are as set forth therein;

That, to show that the present invention should be patentably distinguished from the cited art, I carried out the following comparative working, in which all "parts" are by weight).

Comparative Working

U.S. Patent No. 4,692,490 to Abolins discloses polyphenylene ether compositions within the composition ranges shown in Table 1 below.

Table 1

Ingredients	Amount (parts)
(a) Polyphenylene ether	10 to 90
(b) High impact polystyrene	90 to 10
Total of (a) and (b):	100 parts
(c) Polybrominated 1,4-diphenoxybenzene	6 to 18
(d) Antimony oxide	per 100 parts of (a) and (b)
	2 to 6
	per 100 parts of (a) and (b)

In accordance with the above compositions, a composition containing only polyphenylene ether and high impact polystyrene and compositions containing polyphenylene ether, high impact polystyrene and an organic clay or a common clay (clay not rendered organic, i.e., inorganic clay) were prepared and then molded into a thin injection molded article, in the manner as described below. Then, the dielectric breakdown strength of the molded articles were measured.

#### Example A

60 parts of polyphenylene ether (YPX100F, manufactured by Mitsubishi Engineering Plastic Co.: hereinbelow referred to as "PPE") and 40 parts of high impact polystyrene (H238, manufactured by Nippon Polystyrene Co.: hereinbelow referred to as "HIPS") were dry blended. The blend was melt kneaded on a twin screw extruder at 280 to 300°C and extruded into a strand. The extruded strand was pelletized to obtain a PPE/HIPS composition. The resulting composition was injection molded into a plate-like test piece of a size of 1 mm × 100 mm × 150 mm and the test piece was subjected to the dielectric breakdown test using a dielectric breakdown test machine HAT-300-100RHO manufactured by Hitachi Technoservice Co. at 150°C in silicone oil with raising the voltage at rate of 1 kV/min. The voltage at a current of 5 mA was determined as the dielectric breakdown strength.

The result was indicated as an average value of 3 tests and is shown in Table 2 below.

#### Example B

The procedure described in Example A was repeated except that 7 parts of an organic clay (corresponding to 5 parts of inorganic clay) was added to the blend during the melt kneading. The organic clay used was montmorillonite (inorganic clay) rendered organic with stearylammmonium. The result is shown in Table 2.

#### Example C

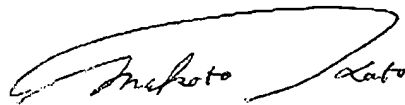
The procedure described in Example B was repeated except that 5 parts of clay (montmorillonite: inorganic clay) was used instead of 7 parts of the organic clay (i.e., montmorillonite rendered organic with stearylammmonium). The result is shown in Table 2.

Table 2

	<u>Example A</u>	<u>Example B</u>	<u>Example C</u>
PPE (parts)	60	60	60
HIPS (parts)	40	40	40
Organic clay (parts)	0	7	0
Clay (parts)	0	0	5
Dielectric breakdown strength (kV/mm)	42.0	45.5	39.5

I, the undersigned declarant, declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and; further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001, of Title 18, of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this        28th        day of November        , 20 02



---

Makoto Kato